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ABSTRACT

People today demand a safer work environment and a safer play environment for children. Accidents such as broken arms are no longer accepted as an inevitable part of growing up. This paper presents recommendations for the maintenance of safe playground areas and equipment, covering three main areas: (1) inspections, which should follow a specified schedule based on manufacturers' instructions and local risk factors, and that should be developed in conjunction with a playground inventory or register; (2) maintenance, which involves routine work based on manufacturers' instructions and local risk factors; and (3) corrective maintenance, which involves the creation of procedures for corrective action toward hazards identified during inspection. The paper also discusses planning for maintenance, why maintenance is necessary and what it is, special attention and urgent repairs for certain equipment, isolating equipment from further use, legal responsibilities, and characteristics of old versus new playgrounds. (EV)

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PLAYGROUND INSPECTION & MAINTENANCE

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EXECUTIVE OFFICER

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OCTOBER 1996

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I am pleased to say today that there is a considerable improvement in the standard of many play areas in Victoria and this is because today's community's attitude towards safety is of a higher priority than it was 10 -15 years ago. People are demanding a safer work environment and a safer play environment for children. No longer will the community accept sub standard play environments. We no longer accept the saying that "Johnnie's broken arm is a part of growing up". Children should be able to play in a challenging but safe environment. Therefore it is up to playground providers to allocate resources to maintain their playgrounds to certain standards.

We also should be aware, that even though we are complying with playground standards, that this will not totally alleviate accidents. But it is the step in the right direction to avoiding serious injuries and this is what I am here to talk to you about today.

PLANNING FOR MAINTENANCE

When a playground is being planned, it is usually hard enough to get together enough money and other resources to build or purchase a new playground, let a lone plan for future maintenance and repairs. Unfortunately, maintenance needs to be planned from the very start or else the newly completed playground will deteriorate into an unattractive site with potential hazards in a short time.

Older playgrounds have often been in the ground without much attention for 15-20 years. As no-one purchases a vehicle or machine and expects it to last so long without a service, it is unreasonable to expect continued performance from playground equipment. Money spent on "servicing" equipment should be budgeted accordingly.

WHY IS MAINTENANCE NECESSARY?

Maintenance is a sensible way of protecting your investment and playgrounds should not differ in this way from any other capital investment.

Lack of maintenance has been the direct cause of both injuries and deaths in playgrounds. In Victoria there has not been a death in a playground since the seventies. But of the 161 accidents investigated by our association in 1988, 8% were due to a lack of maintenance.

These accidents were preventable and were caused by such things as:-

- Excessive wear of materials, causing them to eventually break or come loose under stress.

- "Booby-trap" vandalism.

- Splinters, jagged and rusty edges, and exposed bolts.

- Lack of lubrication of moving parts causing uneven wear and eventual failure.

The fact that many of the victims are children who cannot detect risk of injury, places maintenance on a high priority in playground safety.

WHAT IS MAINTENANCE?

Maintenance includes a range of tasks, which will vary from playground to playground, depending upon materials used, type of equipment, type of planting, climate, vandalism, etc.

All playgrounds need regular, low key maintenance such as mowing, cleaning up litter and broken glass, raking back loose undersurfacing, raking sand pits, and checking that nothing is broken, missing or loose on equipment.

In addition to this equipment needs special attention from time to time. At least every twelve months a suitably qualified person (eg. an engineer) should carry out a thorough inspection of every item of equipment, and direct any repairs which are needed. A similar, but briefer, check should be ideally carried out every few months in addition to this twelve monthly thorough inspection. That is, there is routine maintenance and corrective maintenance. We visually inspect the equipment and document this in our register. If repairs are to be carried out, then this should also should be documented and dated.

SPECIAL ATTENTION

Where special items of equipment present a particular maintenance problem, or need lubrication (especially moving parts of equipment), they will require inspection, lubrication or repairs on a much more regular basis than static items. Some intensively used playgrounds require daily attention. Some areas are more prone to vandalism than others and here again, extra inspections are necessary. The location and intensity of use, needs to be assessed before a maintenance budget can be drawn up. For example, if you have a regional park that attracts hundreds of children compared to pocket park that only attracts a handful, then you will need to inspect the larger playground on a more regular basis. Maybe once a week or daily. You, the providers of playgrounds, are in the best position to know when this playground should be inspected. Set your priorities accordingly.

URGENT REPAIRS

When a playground is damaged, vandalised, or materials fail, it is important that repairs can be carried out as soon as the damage has been reported. This restores the play value of the item quickly, but it also serves to deter further damage. Experience has shown that once an item is damaged, it is "devalued" in the eyes of the user. Continuing the original pattern of destruction is easy and becomes more likely. When you build a playground you need to anticipate such problems and prepare a strategy to deal with urgent problems. The strategy may require you to ensure that the right person is notified who can help in a hurry.

ISOLATING EQUIPMENT FROM FURTHER USE

Sometimes it is impossible to arrange repairs at short notice. If you have a hazardous situation occur in your playground, it is nonetheless your responsibility to ensure that no-one can hurt themselves on it while you arrange for repairs.

In such a situation, some form of effective warning device should be employed (and remember that many children are unable to read signs). Children should be prevented from using damaged equipment - if necessary, remove the access ladders, lock the swing seat to the top beam, or fence the item off from further use.

Make sure your warning device is not itself hazardous. For example, in a school in Melbourne, the principal fenced off a Taranaki Climbing frame, as tiles were falling from the school roof into the playground. They installed red webbing around the unit with star pickets. After school had finished two children were playing on the structure and one fell of the top of the frame and impaled himself on the star picket. Luckily he lived to tell the tale. An inch or so either way he could have been killed. So we should insure that when we put the playground out of action that the prevention of use does not also become a hazard.

LEGAL RESPONSIBILITIES

Lack of funds, or ignorance about your responsibilities does not protect you from liability if someone is injured in your poorly maintained playground. It is vital that these responsibilities are worked through before you start to build the playground.

SERVICE CLUBS

When a Service Club builds a playground, it is often expected that the local council will take over responsibility for mowing and maintenance once it is complete. Such arrangements are usually at best vague, and are rarely discussed and formalised. When it comes to the crunch it may be discovered that Council accepts no responsibility at all. As occupiers of the land, the Council still has a duty of care to the users, to ensure that it is safe.

OLD PLAYGROUNDS

Many old playgrounds exist which have two kinds of problems requiring inspection:-

- Inherent design problems which were built into equipment before safety standards were commonly accepted. No amount of regular maintenance will ever rid your playground of these. Equipment may require re-building, upgrading or removal. In some cases equipment may not warrant the cost of repairs or upgrading if it has been neglected, as the repairs can be more costly than replacing it with a new item.

- Problems caused by wear and tear. These can usually be prevented by regular inspections and repairs and preventative maintenance but if your playground has been neglected for years, rebuilding, replacement or upgrading may also be necessary. In some cases equipment may not warrant the cost of repairs if it has been neglected, as the repairs are more costly than replacing it with a new item.

NEW PLAYGROUNDS

As with most new structures, playground equipment will require a short time to settle into its new location. Soil settles and timber dries out (and shrinks) and sometimes fittings become loose. About six weeks after construction, go over all items and tighten all bolts and check that footings are still firm.

When you purchase equipment, find out from the manufacturer what maintenance is necessary and follow their instructions. Early in 1997 there will be a new standard for playground maintenance for both manufacturers and playground providers. This is a must for all people in the playground industry.

For playgrounds you have built yourself, you should seek detailed advice from The Playgrounds and Recreation Association of Victoria, or other specialist organisations, or individuals with a knowledge of the playground scene.

PLAYGROUND INVENTORY/REGISTER

This document is one of the most important tools of your playground policy. It establishes what equipment you have in your playground, who built it and when. But the single most important factor in line with your maintenance schedule, is that if the equipment complies with current standards. Once this has been documented you do not have to go over and over it again. You just then need to maintain your equipment.

Every new playground installed should be checked to see if it complies to the standard or have it noted that the manufacturer stipulates that it complies with the standard. The older equipment may need to be checked by an independent organisation or an individual who has a good understanding of the standards. This may mean detailing

every fall height, guardrail height, soft fall depth, equipment height etc. This has now been done in many Councils in Victoria as part of their risk management policy.

This will help you make the playground safer for the children and also ensure that you are showing a duty of care to the rate payers. If an accident occurs, it will help you when a legal claim is brought to your notice by a solicitor. In some circumstances, this may alleviate the result of litigation, if you can show that the council, school or early childhood centre has complied with these standards.

In summary I would like to make the following points that draws my paper into three main points:

1. Inspections - Operators of playgrounds should devise and maintain a schedule of inspections based on the manufacturers instructions and local risk factors. In conjunction with this schedule a playground inventory or register should be developed to ascertain what structures are in the playground and whether or not they comply with the current standards.

2. Maintenance - Operators of playgrounds should devise and maintain a routine maintenance list based on the manufacturers instructions and local risk factors.

3. Corrective maintenance - Operators of playgrounds should devise and maintain procedures for corrective action. That is, hazards are identified by inspection and noted for action. This maintenance should bring the original unit back up to the required standard. This action, in some cases, should not be done before consulting the manufacturer and in some cases it may be best if the manufacturer undertook the maintenance, especially if it is still under warranty.

References:

1. Australian Standard 1924 Parts 1 - 1981
Playground Equipment for Parks, School and Domestic Use.
Part 1 General Requirements

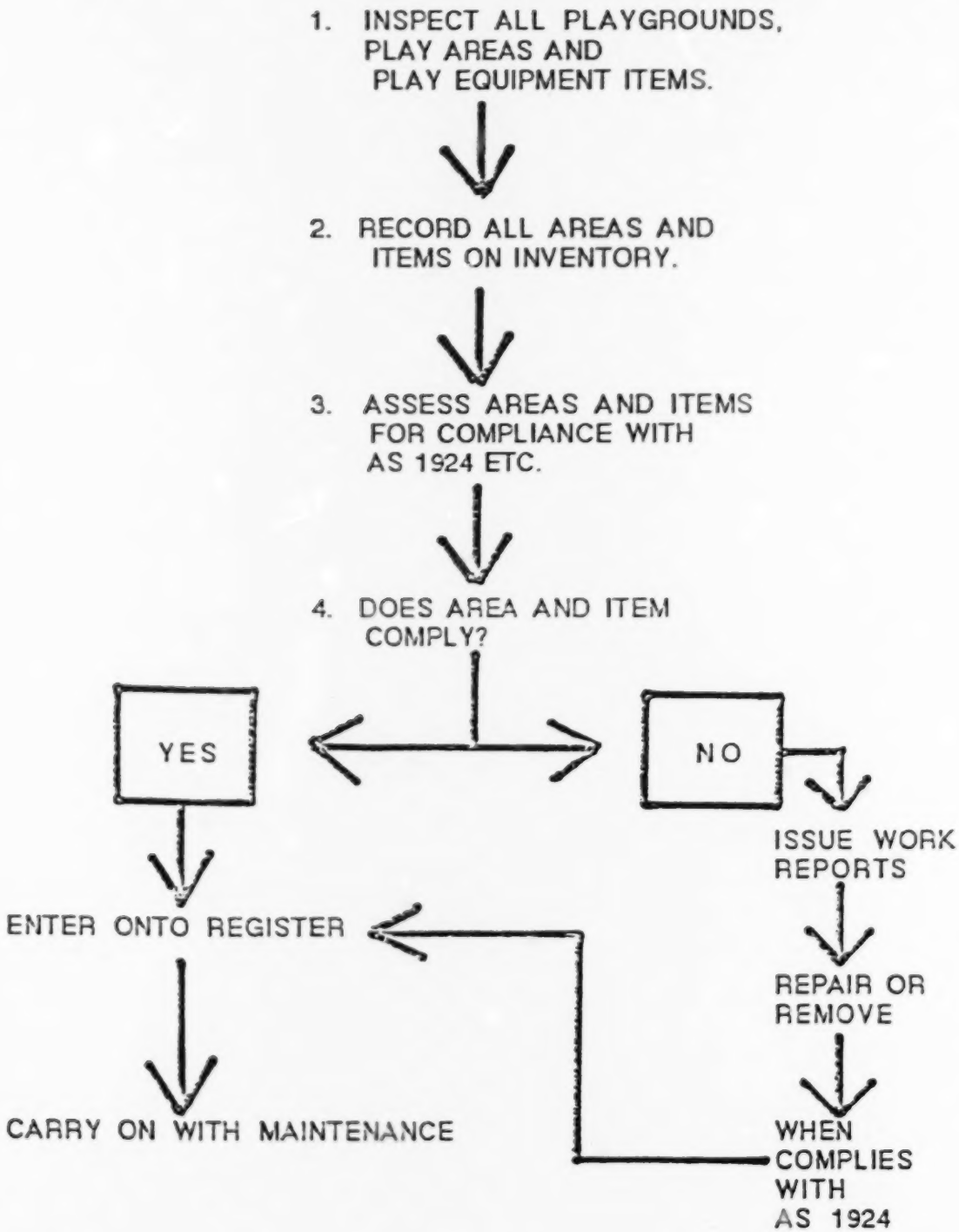
2. Australian Standard 1924 Part 2 - 1981
Playground Equipment for Parks, School and Domestic Use.
Part 2 Design and Construction - Safety Aspects

3. Australian Standard 2155 Part 2 - 1982
Playgrounds - Guide to siting and Installation and Maintenance of Equipment

4. Draft Australian Standard for comment - Dr 91167:S July 1991
Playgrounds and Playground Equipment

5. PRAV Backgrounder 1995
Playground Maintenance - Plan it into your Budget

PLAYGROUND REGISTRY & ASSESSMENT SYSTEM


1. INSPECT ALL PLAYGROUNDS, PLAY AREAS AND PLAY EQUIPMENT ITEMS.
2. RECORD ALL AREAS AND ITEMS ON INVENTORY.
3. ASSESS AREAS AND ITEMS FOR COMPLIANCE WITH AS 1924 ETC.
4. DOES AREA AND ITEM COMPLY?
YES
NO
ISSUE WORK REPORTS
REPAIR OR REMOVE
WHEN COMPLIES WITH AS 1924
ENTER ONTO REGISTER
CARRY ON WITH MAINTENANCE

1. ENTRY ASSESSMENT REPORT

(only required for a new entry in register)

Name of park / school / centre: _____

Code no. : Area:_____ Item: _____

Existing / new installation.

Equipment description / type: _____

Play activity: climbing / swinging / rotating / sliding / rocking

Classification: Senior / Junior / Toddler / Early Childhood

Equipment complies with AS 1924: Yes / No

Deviation from AS 1924 requirements:

Requirement	Description	Severity	Action required

Rectification work done: ... / ... / 19.. Inspection: _____

REMARKS:

_____

_____

REGISTER - RECORD OF INSPECTION
- CHECK LISTS

1.REGISTER OF PLAY AREAS AND EQUIPMENT.

1.1 PLAY AREA REGISTER. Code number: _____
Entry date: ... / ... / 19..

Name of park / school / centre: _____

Address / location: _____

Organisation responsible for maintenance: _____

Type of undersurfacing and border: _____

_____

Code: Toddler (T) / Early Childhood (EC) / Adventure Playground (AP)
Public Junior (PJ) / Public Senior (PS)
Installed play equipment:
Site plan no. : _____ date: ... / ... / 19..

Code No.	Equipment item	Install date	Code	Supplier	Warranty

Play Area plan drawing: to scale yes / no
Equipment code numbers yes / no
Enter only the equipment that is checked with the requirements of AS 1924 and of which an assessment report 1.3 is completed.

Inspection date	Work done

Inspection date	Work done

1.2. PLAY EQUIPMENT REGISTER

Equipment description / type: _____

Item code no: _____

Name of park / school / centre: _____

Organisation responsible for maintenance: _____

Date of assessment report: ... / ... 19 ..

Periodical inspection dates:	inspected by:	Repair date:	Repair by:	Remarks

Reported injury date: ... / ... /19 ..

Action taken: date: ... / ... / 19 ..

Reported mal function: date: ... / ... / 19 ..

Action taken: date: ... / ... / 19 ..

1. SUGGESTED CHECK LIST FOR EQUIPMENT

1.1 MATERIALS

deterioration:
rust / rot cracks / brittleness base material
protective coatings
decorative finishes
broken / damaged / bent

1.2 STRUCTURAL STRENGTH

supporting structure / footings
deflection / stability
static assemblies / components
moving assemblies / components
fasteners / fixing / welding - failure / wear / missing
bearings / chain wear / missing lubrication

1.3 FUNCTIONAL DESIGN
operates as intended.

damages, wear or deterioration causes no conflict with AS 1924 such as:

limits for movement - speed - entrapment - moving impact - sharp points (splinters) - sharp edges - openings - missing protective devices - lodged foreign matter - slip resistance

1. SUGGESTED CHECK LIST FOR THE PLAY AREA

G's / S.I. reading - depth measuring depressions in

or subsiding sub-soil bonding or fixing of unitary

materials foreign objects

depressions in loose undersurfacing material foreign

material mixed or embedded

stability of the borders - retaining walls - embankments

- fencing - trees / branches - rocks

drainage - pits - gates - vegetation - shrubs - trees - grass

1. PERIODICAL EQUIPMENT MAINTENANCE INSTRUCTIONS

* component replacement
* fastener / fixing / weld replacement or adjustment
* equipment adjustments - lubrication
* removal - restoring site - securing against use / guarding
* cleaning - waxing - redecoration - protection against deterioration
* replenishment of consumable materials (eg. sand)
* manufacturers maintenance instructions

2. PERIODICAL SITE MAINTENANCE INSTRUCTIONS

undersurfacing:
* backfill of subsoil
* removal foreign matter
* turning-over and grading of loose material
* fixing unitary material
* replenishment requirements
* drains
* manufacturers maintenance instruction

vegetation: cutting / trimming / removal

borders - retaining walls - embankments -

landscape components